

**Notice of Allowability**

Application No.

10/634,322

Examiner

Kamran Afshar, 571-272-7796

Applicant(s)

CARTER ET AL.

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 1/13/2006.
2. ☒ The allowed claim(s) is/are 1,3,4,6,10-20,22-37 and 40-58.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)                      |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                              |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance             |
|   | 9. <input type="checkbox"/> Other _____  |

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## DETAILED ACTION

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. James D. McFarland, Reg. No.: 32, 544 on 1/13/2006.

The application has been amended as follows:

#### **In The Claims:**

1. (Amended) A method of obtaining data useful for one or more wireless network applications, the method comprising performing the following steps:

detecting an occurrence of a network event;

obtaining a position estimate for a subscriber station operating within a wireless communications system responsive to a triggering event;  
detecting the occurrence of the network event;

forming a record associating the position estimate for the subscriber station with either or both at least one of an event identifier and data, measured or obtained, responsive to event;  
obtaining the position estimate; and

storing or transmitting the record responsive to forming the record;

wherein the network event includes at least one of the following: the subscriber station entering a coverage area, the subscriber station exiting a coverage area, and an expiration of a timer while the subscriber station is outside the coverage area of a wireless communications system.

2. (Cancelled)

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3. (Amended) The method of claim 1 wherein the network event is observed by the subscriber station.
4. (Amended) The method of claim 21 wherein the network event is observed by an entity in the wireless communication system other than the subscriber station.
5. (Cancelled)
6. (Amended) The method of claim 21 wherein the network event is includes an actual or near dropped call condition.
- 7-9. (Cancelled)
10. (Amended) The method of claim 21 wherein the network event is includes a failed handoff condition.
11. (Amended) The method of claim 21 wherein the network event is includes a handoff or near handoff condition.
12. (Amended) The method of claim 11 wherein the handoff condition is includes a hard or soft handoff condition.
13. (Amended) The method of claim 11 wherein the near handoff condition is includes a hard or soft handoff condition.
14. (Amended) The method of claim 21 wherein the network event is includes a change in band condition.

15. (Amended) The method of claim 21 wherein the network event is includes passage of the subscriber station between the coverage areas of two wireless communications systems or system entities.

16. (Amended) The method of claim 21 wherein the network event is includes passage of the subscriber station between the coverage areas of a donor base station and a repeater.

17. (Amended) The method of claim 21 wherein the network event is includes detection at the subscriber station of an unexpected or unexpectedly strong pilot.

18. (Amended) The method of claim 21 wherein the network event is includes detection at the subscriber station of an unexpected base station.

19. (Amended) The method of claim 21 wherein the network event is includes detection at the subscriber station of a pilot, which is absent from the subscriber station's neighbor list.

20. (Amended) A method of obtaining data useful for one or more wireless network applications, the method comprising performing the following steps:

\_\_\_\_\_ detecting an expiration of a timer;

\_\_\_\_\_ obtaining a position estimate for a subscriber station operating within a wireless communications system responsive to detecting the expiration of the timer;

\_\_\_\_\_ forming a record associating the position estimate for the subscriber station with at least one of an event identifier and data, measured or obtained, responsive to obtaining the position estimate; and

\_\_\_\_\_ storing or transmitting the record responsive to forming the record; ~~The method of claim 1 wherein the event is expiration of a timer.~~

wherein the record associates the position estimate with one or more measurements of pilot strength and phase; wherein at least one of the pilots is associated with a traffic channel existing between the subscriber station and a base station; and wherein the traffic channel is at least one of a forward traffic channel, and a reverse traffic channel.

21. (Cancelled)

22. (Amended) A method of obtaining data useful for one or more wireless network applications, the method comprising performing the following steps:

detecting a user initiation of a 911 call;

obtaining a position estimate for a subscriber station operating within a wireless communications system responsive to detecting the user initiation of the 911 call;

forming a record associating the position estimate for the subscriber station with at least one of an event identifier and data, measured or obtained, responsive to obtaining the position estimate; and

storing or transmitting the record responsive to forming the record.~~The method of claim~~

~~21 wherein the event is initiation of a 911 call.~~

wherein the record associates the position estimate with one or more measurements of pilot strength and phase; wherein at least one of the pilots is associated with a traffic channel existing between the subscriber station and a base station; wherein the traffic channel is at least one of a forward traffic channel, and a reverse traffic channel.

23. (Amended) A method of obtaining data useful for one or more wireless network applications, the method comprising performing the following steps:

detecting a request for position-dependent services in a Web-enabled subscriber station;

obtaining a position estimate for a subscriber station operating within a wireless communications system responsive to detecting the request for position-dependent services in the Web-enabled subscriber station;

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forming a record associating the position estimate for the subscriber station with at least one of an event identifier and data, measured or obtained, responsive to obtaining the position estimate; and  
storing or transmitting the record responsive to forming the record; ~~The method of claim 21 wherein the event is a request for position dependent services in a Web-enabled subscriber station.~~

wherein the record associates the position estimate with one or more measurements of pilot strength and phase; wherein at least one of the pilots is associated with a traffic channel existing between the subscriber station and a base station; and wherein the traffic channel is at least one of a forward traffic channel, and a reverse traffic channel.

24. (Amended) A method of obtaining data useful for one or more wireless network applications, the method comprising performing the following steps:

detecting an occurrence of a triggering event;  
obtaining a position estimate for a subscriber station operating within a wireless communications system responsive to detecting the occurrence of the triggering event;  
detecting an expiration of a timer;  
obtaining the position estimate for a subscriber station operating within the wireless communications system responsive to detecting the expiration of the timer;  
forming a record associating the position estimate for the subscriber station with at least one of an event identifier and data, representing one or more measurements of pilot strength or phase, measured or obtained, responsive to obtaining the position estimate; and  
storing or transmitting the record responsive to forming the record.

~~The method of claim 1 wherein the record associates the position estimate with one or more measurements of pilot strength or phase.~~

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25. (Original) The method of claim 24 wherein at least one of the pilots is associated with a traffic channel existing between the subscriber station and a base station.
26. (Original) The method of claim 25 wherein the traffic channel is a forward traffic channel.
27. (Original) The method of claim 25 wherein the traffic channel is a reverse traffic channel.
28. (Original) The method of claim 1 wherein the position estimate is determined by the subscriber station.
29. (Amended) The method of claim 21 wherein the position estimate is determined by an entity in the system other than the subscriber station.
30. (Original) The method of claim 29 wherein the other entity is a position determination entity.
31. (Amended) The method of claim 21 wherein the record is stored locally at the subscriber station.
32. (Amended) The method of claim 21 wherein the record is transmitted and stored at a remote location in the wireless communication system.
33. (Amended) The method of claim 32 wherein the record associating the position of the subscriber station is stored in a database holding like records associating the positions of other subscriber stations obtained ~~from~~ by other subscriber stations serviced by the wireless communication system.

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34. (Original) A memory storing a sequence of software instructions embodying the method of claim 1.

35. (Original) A system comprising a processor, and the memory of claim 34, wherein the processor is configured to access and execute the software instructions stored in the memory.

36. (Original) The system of claim 35 embodied by or incorporated within a subscriber station.

37. (Amended) A wireless communications system for obtaining data useful for one or more network applications comprising:

one or more network entities each configured to (1) obtain or have obtained a position estimate for a subscriber station responsive to ~~a triggering~~detecting an occurrence of a network event, (2) form or have formed a record associating the position estimate for the subscriber station with ~~either or both~~at least one of an identifier of the ~~triggering~~network event and data<sub>1</sub> measured or obtained<sub>1</sub> responsive to the ~~triggering event~~obtaining or having obtained the position estimate, and (3) store or having stored the record in a database responsive to forming or having formed the record;

wherein the one or more triggeringnetwork events comprise a failed handoff condition, further comprising a memory holding data representing a map of failed handoff areas derived from the database, and for each area, association data associating the area with one or more base stations.

38-39. (Cancelled)

40. (Amended) The system of claim ~~39~~ 37 comprising one or more subscriber stations configured to access data derived from the database and, upon detecting roaming into a failed handoff area using this data, forcing or having forced one or more base stations associated with



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the failed handoff area onto one or more lists applicable to the subscriber station for supporting handoffs.

41. (Amended) The system of claim ~~39~~ 37 further comprising one or more subscriber stations configured to access the data derived from the database and, upon detecting roaming into a failed handoff area using this data, adjusting or having adjusted one or more thresholds applicable to the subscriber station for supporting handoffs.

42. (Amended) The system of claim ~~39~~ 37 further comprising one or more subscriber stations configured to access the data derived from the database and, upon detecting roaming into a failed handoff area using this data, adjusting or having adjusted one or more search times applicable to the subscriber station for supporting handoffs.

43. (Original) The system of claim 37 wherein the one or more triggering events comprises a subscriber station roaming into, out of, or within a coverage gap.

44. (Original) The system of claim 43 further comprising a memory holding data derived from the database comprising a map of coverage gaps.

45. (Original) The system of claim 43 further comprising a memory holding data derived from the database and representing one or more gradient maps.

46. (Amended) A method of obtaining data useful for one or more wireless network applications comprising performing the following steps by or for each of a plurality of subscriber stations operating within a wireless communications system:

detecting an occurrence of a network event;

obtaining a position estimate for a subscriber station responsive to ~~one or more~~  
~~triggering~~the detecting the occurrence of the network events;  
forming a record associating the position estimate for the subscriber station with ~~either or~~  
~~both~~at least one of an identifier of the triggering event and data measured or obtained  
responsive to the ~~triggering event~~the obtaining the position estimate; and  
storing or having stored the record in a database responsive to the forming the record;  
wherein the network event includes at least one of the following: the subscriber station  
entering a coverage area, the subscriber station exiting a coverage area, and an expiration of a  
timer while the subscriber station is outside the coverage area of a wireless communications  
system.

47. (Amended) The method of claim 46 wherein the ~~one or more triggering~~network events  
comprises failed handoff conditions.

48. (Original) The method of claim 47 further comprising deriving data from the database  
comprising a map of failed handoff areas, and association data associating with each area one or  
more base stations.

49. (Original) The method of claim 48 further comprising, upon a subscriber station roaming  
into a failed handoff area, forcing or having forced a base station associated with the failed  
handoff area onto one or more of lists applicable to the subscriber station for supporting handoffs.

50. (Original) The method of claim 48 further comprising, upon a subscriber station roaming  
into a failed handoff area, adjusting or having adjusted one or more thresholds applicable to the  
subscriber station for supporting handoffs.

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51. (Original) The method of claim 48 further comprising, upon a subscriber station roaming into a failed handoff area, adjusting or having adjusted one or more search times applicable to the subscriber station for supporting handoffs.

52. (Original) The method of claim 46 wherein the one or more triggering events comprises roaming into, out of, or within coverage gaps.

53. (Original) The method of claim 52 further comprising deriving data from the database representing a map of coverage gaps.

54. (Original) The method of claim 52 further comprising deriving data from the database representing one or more gradient maps.

55. (Original) The method of claim 53 further comprising using the data for a network planning or optimization application.

56. (Original) The method of claim 54 further comprising using the data for a network planning or optimization application, or for validating an RF propagation model.

57. (Amended) A method of obtaining data useful for one or more wireless network applications comprising performing the following steps:

a step for forming records associating, for each of a plurality of subscriber stations, a position estimate for the subscriber station obtained, responsive to ~~a triggering~~detecting an occurrence of a network event, with ~~either or both~~at least one of an identifier of the ~~triggering network~~ event and data, measured or obtained, responsive to the ~~event~~position estimate;

a step for storing the records in a database responsive to the step for forming the records; and

a step for performing one or more network planning, optimization, validation or operations applications using data derived from the database;

wherein the network event includes at least one of the subscriber station entering the coverage area, the subscriber station exiting the coverage area, and an expiration of a timer while the subscriber station is outside the coverage area of the wireless communications system.

58. (Original) The method of claim 33 wherein base station almanac information is related to said database.

***Allowable Subject Matter***

2. Claims 1, 3-4, 6, 10-20, 22-37, and 40-58 are allowed.

The following is an examiner's statement of reasons for allowance: 1, 3-4, 6, 10-20, 22-37, and 40-58.

With respect to claims 1, 46, the prior art of record fails to disclose singly or in combination or render obvious that forming a record associating the position estimate for the subscriber station with least one of an event identifier and data, measured or obtained, responsive to obtaining the position estimate; and storing or transmitting the record responsive to forming the record; wherein the network event includes at least one of the following: the subscriber station entering a coverage area, the subscriber station exiting a coverage area, and an expiration of a timer while the subscriber station is outside the coverage area of a wireless communications system.

With respect to claim 20, the prior art of record fails to disclose singly or in combination or render obvious that detecting an expiration of a timer; obtaining a position estimate for a subscriber station operating within a wireless communications system responsive to detecting the expiration of the timer; storing or transmitting the record responsive to forming the record; wherein the record associates the position estimate with one or more measurements of pilot strength and phase; wherein at least one of the pilots is associated with a traffic channel existing between the subscriber station and a base station; and wherein the traffic channel is at least one of a forward traffic channel, and a reverse traffic channel.

With respect to claim 22, the prior art of record fails to disclose singly or in combination or render obvious that detecting a user initiation of a 911 call; obtaining a position estimate for a subscriber station operating within a wireless communications system responsive to detecting the user initiation of the 911 call; storing or transmitting the record responsive to forming the record; wherein the record associates the position estimate with one or more measurements of pilot strength and phase; wherein at least one of the pilots is associated with a traffic channel existing between the subscriber station and a base station; wherein the traffic channel is at least one of a forward traffic channel, and a reverse traffic channel.

With respect to claim 23, the prior art of record fails to disclose singly or in combination or render obvious that detecting a request for position-dependent services in a Web-enabled subscriber station; obtaining a position estimate for a subscriber station operating within a wireless communications system responsive to detecting the request for position-dependent services in the Web-enabled subscriber station; wherein the record associates the position estimate with one or more measurements of pilot strength and phase; wherein at least one of the pilots is associated with a traffic channel existing between the subscriber station and a base station; and wherein the traffic channel is at least one of a forward traffic channel, and a reverse traffic channel.

With respect to claim 24, the prior art of record fails to disclose singly or in combination or render obvious that the steps: detecting an occurrence of a triggering event; obtaining a position estimate for a subscriber station operating within a wireless communications system responsive to detecting the occurrence of the triggering event; detecting an expiration of a timer; obtaining the position estimate for a subscriber station operating within the wireless communications system responsive to detecting the expiration of the timer; forming a record associating the position estimate for the subscriber station with at least one of an event identifier and data, representing one or more measurements of pilot strength or phase, measured or obtained, responsive to obtaining the position estimate; and storing or transmitting the record responsive to forming the record.

With respect to claim 37, the prior art of record fails to disclose singly or in combination or render obvious that the network applications comprising: one or more network entities each configured to obtain or have obtained a position estimate for a subscriber station responsive to detecting an occurrence of a

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network event, (2) form or have formed a record associating the position estimate for the subscriber station with least one of an identifier of the network event and data, measured or obtained, responsive to the obtaining or having obtained the position estimate, and (3) store or having stored the record in a database responsive to forming or having formed the record; wherein the one or more network events comprise a failed handoff condition, further comprising a memory holding data representing a map of failed handoff areas derived from the database, and for each area, association data associating the area with one or more base stations.

With respect to claim 57, the prior art of record fails to disclose singly or in combination or render obvious that the steps: a step for forming records associating, for each of a plurality of subscriber stations, a position estimate for the subscriber station obtained, responsive to detecting an occurrence of a network event, with at least one of an identifier of network event and data, measured or obtained, responsive to the position estimate; a step for storing the records in a database responsive to the step for forming the records; and a step for performing one or more network planning, optimization, validation or operations applications using data derived from the database; wherein the network event includes at least one of the subscriber station entering the coverage area, the subscriber station exiting the coverage area, and an expiration of a timer while the subscriber station is outside the coverage area of the wireless communications system.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
  - a) Tanay (U.S. Pub. No.: 2003/0129987 A1).
  - b) Abiri (U.S. Pub. No.: 2004/0203727 A1).
  - c) Grenning (U.S. 5,706,333).


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Any inquiry concerning this communication or earlier communication from the examiner should be directed to Kamran Afshar whose telephone number is (571) 272-7796. The examiner can be reached on Monday-Friday.

If attempts to reach the examiner by the telephone are unsuccessful, the examiner's supervisor, **Feild, Joseph** can be reached @ (571) 272-4090. The fax number for the organization where this application or proceeding is assigned is **571-273-8300** for all communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**Kamran Afshar**

  
**JOSEPH FEILD**  
**SUPERVISORY PATENT EXAMINER**